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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/005,936	12/03/2001	Jinsaku Masuyama	016295.0733 (DC-03225)	7808
7590 Adam L. Stroud Baker Botts L.L.P. One Shell Plaza 910 Louisiana Houston, TX 77002-4995			EXAMINER CHEN, TSE W	
			ART UNIT 2116	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/005,936

Applicant(s)

MASUYAMA ET AL.

Examiner

Tse Chen

Art Unit

2116

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 October 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on October 31, 2007 has been entered.

Claim Objections

2. Claim 1 is objected to because of the following informalities: "that connector" should be "each connector". Appropriate correction is required.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-9, 14-16, 19-23, 25-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smith, U.S. Publication 2002/0198608, in view of Ando, Japanese Publication 2000-102166.

5. In re claim 1, Smith discloses a computer system [fig.2; multiple processor combination 100] comprising:

- A power supply [inherently to supply operational voltage] [0025].

- A plurality of server modules [server blades 102-1 and 102-n; fig.2].
 - A midplane [pci bus 110] comprising:
 - A plurality of connectors [112] operable to receive the plurality of server modules, each connector having a unique predetermined address [fig.1; 0025-0026; each server module connects to the midplane through a respective connector].
 - An address module [system server blade 102-0] operable to calculate a start-up time [operable broadly interpreted as optionally capable; address module, responsible for managing the configuration of the other server modules, is capable of calculating a start-up time].
6. Smith did not discuss details of power management for the system.
7. Ando discloses a computer system [electronic equipment] comprising:
- A power supply [102].
 - A midplane [101] comprising:
 - A plurality of connectors [slots] operable to receive the plurality of modules [103; card analogous to server for processing communication signals], each connector having a unique predetermined address independent of the server modules [0029].
 - An address module [105] operable to obtain the unique addresses of the connectors from the midplane and to calculate a start-up time [e.g., ΔT ; time shifted] associated with each connector [slot] based on (a) the unique address [e.g., slot address 502 associated with different resistance values] for each connector [slot] and (b) a multiplication factor [time constant] associated with a

duration of an inrush load of at least one of the server modules [103; card analogous to server for processing communication signals], the start-up times calculated for the plurality of connectors defining a start-up sequence for the plurality of connectors [abstract, solution; 0012, 0018, 0022, 0029, 0033, 0035; different pattern edging for each unique address connector with different address signals].

- Wherein the system is operable to couple the power supply [via 406, 407] to the plurality of server modules based on the start-up times and the defined start-up sequences associated with the plurality of connectors [0030-31].

8. It would have been obvious to one of ordinary skill in the art, having the teachings of Smith and Ando before him at the time the invention was made, to modify the system taught by Smith to include the teachings of Ando, in order to obtain the computer system comprising an address module operable to obtain the unique addresses from the midplane and to calculate a start-up time for a first server module based on the unique address for the first server module and a multiplication factor associated with a duration of an inrush load of at least one of the server modules; wherein the system is operable to couple the power supply to the first server module based on the start-up time. One of ordinary skill in the art would have been motivated to make such a combination as it provides a way to manage the initial inrush current at startup to limit the power supply means [Ando: abstract].

9. As to claim 2, Smith discloses, wherein the plurality of server modules comprise blade servers [incorporate multiple 102 blade servers as one server module as it is well known in the art to incorporate a plurality of servers into one module].

10. As to claim 3, Examiner had taken Official Notice that brick and blade servers are known equivalents as prior art. One of ordinary skill in the art would have chosen either brick or blade server based on the configuration requirements of the system. Accordingly, it would have been obvious to replace blade servers with brick servers to be sequentially powered up in an autonomous fashion.

11. As to claim 4, Smith discloses, wherein the midplane comprises a circuit board including the plurality of connectors [multiple compact pci connectors for multiple modules] coupled to the midplane and two or more resistors [e.g., pull-up resistors associated with GA-pins] coupled to the midplane [0025]. Regarding the resistors, the Examiner has taken Official Notice that it is prior art to use pull-up resistors to signify a certain bit of information. One of ordinary skill in the art would have been motivated to make such a combination in order to provide status information in an electrical interconnection.

12. As to claim 5, Smith discloses, wherein the plurality of connectors [multiple compact pci connectors for multiple modules] are operable to provide an interface between the plurality of server modules and the midplane [0025-26].

13. As to claim 6, Smith discloses, wherein each connector [compact pci connector 112] is operable to interface with one server module [fig.1; 0025].

14. As to claim 7, Smith discloses, wherein the midplane provides a unique address to each server module through resistor strapping the one or more resistors [0025].

15. As to claim 8, Ando discloses, wherein the midplane is further operable to provide an interface [301] between the plurality of server modules and the power supply [0024].

16. As to claims 9, Ando discloses, wherein the power supply is operable to provide power to each server module upon expiration of the start-up time [e.g., ΔT] for each server module [0022].

17. In re claims 14 and 23, Smith discloses a computer system [fig.2; multiple processor combination 100] and associated method comprising:

- A plurality of server modules operable to process data [server blades 102-1 and 102-n; fig.2].
- One or more midplanes [pci bus 110] associated with the plurality of server modules, the midplanes including a plurality of connectors [112; multiple compact pci connectors for multiple modules], each connector having a unique predetermined address [fig.1; e.g., connector 112 separate from server module 102], each connector operable to interface with one of the server modules [0025-0026; each server module connects to the midplane through a respective connector].
- An address module [system server blade 102-0] associated with the midplane, the address module operable to obtain the unique address from the connectors and to calculate a start-up time [operable broadly interpreted as optionally capable; address module, responsible for managing the configuration of the other server modules, is capable of calculating a start-up time] [0029; determines unique address of each connector based on GA pins].
- A power supply associated with the one or more midplanes, the power supply operable to provide power to start up the server modules [inherently to supply operational power] [0025].

- One or more chassis [system cage] operable to house the server modules, the midplanes, and the power supply [fig.2; 0025; operable broadly interpreted as optionally capable; system cage capable of housing various objects without any particularly defined holding structure].
18. Smith did not discuss details of power management for the system.
19. Ando discloses a computer system [electronic equipment] comprising:
- An address module [105] associated with the midplane, the address module operable to obtain the unique addresses of the connectors from the midplane and to calculate a start-up time [e.g., ΔT ; time shifted] associated with each connector [slot] based on (a) the unique address [e.g., slot address 502] of the connector [slot] and (b) at least one start-up characteristic [inrush load requirement - e.g., startup set longer than the lasting time of the inrush current] of each server module [103; card analogous to server for processing communication signals], the start-up times calculated for the plurality of connectors defining a start-up sequence for the plurality of connectors [abstract, solution; 0012, 0022; 0029, 0033].
 - A power supply [102] associated with the one or more midplanes [101], the power supply operable to provide power to start up the server modules in a sequence determined by the start-up times and the defined start-up sequence associated with the plurality of connectors [timing for supplying power to each module is shifted] [i.e., automatically sequencing power to start up the server modules based on the start-up times for the slot connectors of the server modules] [abstract; 0001; 0022; 0027; 0039-41].

20. It would have been obvious to one of ordinary skill in the art, having the teachings of Smith and Ando before him at the time the invention was made, to modify the system taught by Smith to include the teachings of Ando, in order to obtain the claimed system. One of ordinary skill in the art would have been motivated to make such a combination as it provides a way to manage the initial inrush current at startup to limit the power supply means [Ando: abstract].

21. As to claim 15, Smith discloses, wherein the server modules comprise blade servers [102].

22. As to claim 16, Examiner had taken Official Notice that brick and blade servers are known equivalents as prior art. One of ordinary skill in the art would have chosen either brick or blade server based on the configuration requirements of the system. Accordingly, it would have been obvious to replace blade servers with brick servers to be sequentially powered up in an autonomous fashion.

23. As to claim 19, Smith discloses, wherein the midplane comprises a circuit board including two or more connectors [multiple compact pci connectors for multiple modules] coupled to the midplane and two or more resistors [some kind of resistors for the multiple GA pin is needed or a short may occur] coupled to the midplane [0025]. Regarding the resistors, the Examiner had taken Official Notice that it is prior art to use pull-up resistors to signify a certain bit of information. One of ordinary skill in the art would have been motivated to make such a combination in order to provide status information in an electrical interconnection.

24. As to claim 20, Smith discloses, wherein the midplane has a unique predetermined address independent of the server modules [0025].

25. As to claims 21 and 22, Ando discloses, wherein the power supply is operable to provide power to each server module upon expiration of the start-up time [e.g., ΔT] for each server module [0022].

26. As to claim 25, the Examiner had taken Official Notice that it is prior art for one or more cabinets to house one or more of the chassis in order to provide an orderly access.

27. In re claim 26, Smith discloses a information handling system [fig.2; multiple processor combination 100] comprising:

- A power supply [inherently to supply operational voltage] [0025].
- A plurality of server modules [server blades 102-1 and 102-n; fig.2].
- A midplane [pci bus 110] comprising:
 - A plurality of connectors [112] operable to receive the plurality of server modules, each connector having a unique predetermined address [fig.1; 0025-0026; each server module connects to the midplane through a respective connector].
 - An address module [system server blade 102-0] operable to obtain the unique addresses of the connectors from the midplane [0029; determines unique address of each connector based on GA pins].

28. Smith did not discuss details of power management for the system.

29. Ando discloses a computer system [electronic equipment] comprising:

- A power supply [102].
- A midplane [101] comprising:

- A plurality of connectors [slots] operable to receive the plurality of modules [103; card analogous to server for processing communication signals], each connector having a unique predetermined address independent of the server modules [0029].
- An address module [105] operable to obtain the unique addresses of the connectors [slot] from the midplane [101] and the associate the unique addresses of the connectors with a predetermined start-up time stored by the address module, the start-up times for the plurality of connectors defining a start-up sequence for the plurality of connectors [0021, 0029].
- Wherein the system is operable to couple the power supply [via 406, 407] to the plurality of server modules based on the start-up times and the defined start-up sequences associated with the plurality of connectors [0030-31].

30. It would have been obvious to one of ordinary skill in the art, having the teachings of Smith and Ando before him at the time the invention was made, to modify the system taught by Smith to include the teachings of Ando, in order to obtain the claimed system. One of ordinary skill in the art would have been motivated to make such a combination as it provides a way to manage the initial inrush current at startup to limit the power supply means [Ando: abstract].

31. Claims 10, 17, 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smith and Ando as applied to claims 1, 14 and 23 above, and further in view of Butka et al., U.S. Patent 6735704, hereinafter Butka.

32. Smith and Ando disclose each and every limitation of the claim as discussed above. Smith and Ando did not discuss a management controller to provide redundant operation.

33. In re claims 10 and 24, Butka discloses a system [10; fig.1] comprising a management controller [master controller 20] associated with the midplane [bus 22], the management controller operable to provide sequence redundancy by sequencing power to the plurality of server modules if the midplane experiences a failure [col.4, ll.8-51; col.5, l.34 – col.6, l.62].

34. It would have been obvious to one of ordinary skill in the art, having the teachings of Butka, Smith and Ando before him at the time the invention was made, to modify the system taught by Smith and Ando to include the redundancy teachings of Butka, in order to permit the system to continue normal operations in the event of a failure [Butka: col.1, ll.20-42]. One of ordinary skill in the art would have been motivated to make such a combination as it provides a way to permit the system to continue normal operations in the event of a failure.

35. Smith and Ando disclose each and every limitation of the claim as discussed above. Smith and Ando did not disclose explicitly a multiplication factor.

36. In re claim 17, Butka discloses a method wherein calculating the start-up time [delay seconds] comprises obtaining a multiplication factor [power subsystem number-1] for each server module [power nodes] and calculating the start-up time associated with each connector using the multiplication factor [col.4, ll.8-39].

37. It would have been obvious to one of ordinary skill in the art, having the teachings of Butka, Smith and Ando before him at the time the invention was made, to modify the system taught by Smith and Ando to include the multiplication factor teachings of Butka, in order to avoid simultaneous power supplies [Butka: col.1, ll.8-39]. One of ordinary skill in the art would have been motivated to make such a combination as it provides a way to avoid simultaneous power supplies.

38. Claims 11, 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smith and Ando as applied to claims 1 and 14 above, and further in view of Fung, US Publication 20050177755.

39. Smith and Ando disclose each and every limitation of the claim as discussed above.

Smith and Ando did not disclose explicitly a timer.

40. In re claim 11, Fung discloses a computer system [fig.1] comprising at least one module [e.g., management module] associated with at least two server modules, the module operable to perform power management functions [i.e., calculate start-up time] for each server module [0024; 0027], wherein the module includes a timer [376], the address module further operable to set the timer with the start-up time and the timer operable to count to [down from] the start-up time [0037]. Regarding the timer that is operable to count down from the start-up time, the Examiner had taken Official Notice that it is prior art to configure a timer to either count down or count to a known time for timing a duration. One of ordinary skill in the art would have been motivated to make such a combination in order to count towards a known time.

41. In re claim 18, Fung discloses, wherein each address module includes a timer [376], the address module further operable to set the timer with the start-up time and the timer operable to count to [down from] the start-up time [0037]; and Ando discloses, on the expiration of the start-up time, switching a switch [407] to an on position that allows the server module to receive power from a power supply [0030]. Regarding the timer that is operable to count down from the start-up time, the Examiner had taken Official Notice that it is prior art to configure a timer to either count down or count to a known time for timing a duration. One of ordinary skill in the art would have been motivated to make such a combination in order to count towards a known time.

42. It would have been obvious to one of ordinary skill in the art, having the teachings of Smith, Fung and Ando before him at the time the invention was made, to modify the system taught by Smith and Ando to include the teachings of Fung, as timers are very well known in the art and suitable for use in the system of Smith and Ando. One of ordinary skill in the art would have been motivated to make such a combination as it provides a very well known way to provide timing of events [configurable counts more flexible and accurate than analog] and maintain performance while reducing power consumption in a server farm via global power management [Fung: 0008-11].

43. Claims 12-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smith and Ando as applied to claim 1 above, and further in view of Duley, U.S. Patent 6766222.

44. In re claim 12, Smith and Ando disclose each and every limitation of the claim as discussed above. Smith and Ando did not discuss details of the switches associated with the server modules.

45. Duley discloses a system [power sequencing system] comprising a switch associated with each server modules [slave] and the address module [master], the switch operable to accept a command from the address module to switch between an on position and an off position [col.6, ll.18-39; col.6, l.50 – col.7, l.49].

46. It would have been obvious to one of ordinary skill in the art, having the teachings of Duley, Smith, and Ando before him at the time the invention was made, to modify the system taught by Smith and Ando to include the switches of Duley, in order to provide cost savings in power supplies [Duley: col.7, l.50 – col.8, l.4]. One of ordinary skill in the art would have been

motivated to make such a combination as it provides a way to provide cost savings in power supplies.

47. As to claim 13, Ando discloses, wherein at the expiration of the start-up time a module switches a selected switch [407] to the on position allowing an associated server module [card] to receive power from the power supply [0030].

Response to Arguments

48. Applicant's arguments filed October 31, 2007 have been fully considered but they are not persuasive.

49. Applicant argues that Ando does not teach "a defined start-up sequence associated with the plurality of connectors". Examiner disagrees and submits that Ando discloses a unique predetermined address associated with each connector [slot] that defines the different resistance ultimately resulting in the sequential start-up time for the modules [0029].

50. Applicant argues that "no part of Ando refers to a multiplication factor..." Examiner submits Ando's time constant may also be interpreted as a multiplication factor, at least in an analog form. The time constant multiplication factor for an RC-circuit may be derived by one with ordinary skill in the art in the design of the circuitry.

51. As such, Applicant's arguments are deemed not persuasive and the rejection is respectfully maintained.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tse Chen whose telephone number is (571) 272-3672. The examiner can normally be reached on Monday - Friday 9AM - 5PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rehana Perveen can be reached on (571) 272-3676. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

A handwritten signature in black ink, appearing to be 'Tse Chen', with a long horizontal line extending to the right.

Tse Chen
December 26, 2007